



TSB

Transportation Safety Board
of Canada



Bureau de la sécurité des transports
du Canada

LEARNING FROM ACCIDENTS

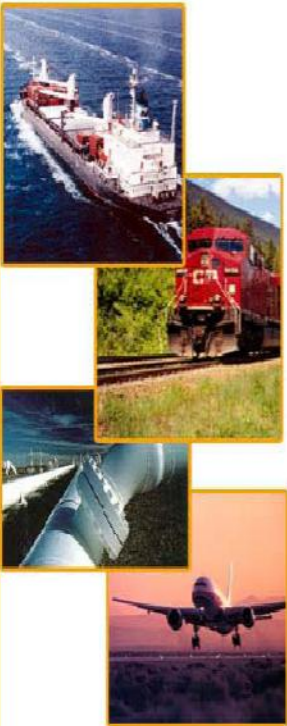
Two Decades of Investigation and Analysis of Fishing Vessels Accidents in Canada

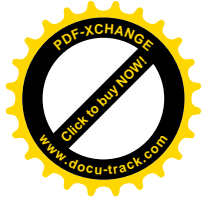
Reykjavik, Iceland
11-14 May 2009

Marcel Ayeko

Acting Director - Marine Investigation
Transportation Safety Board (TSB) of Canada

BST





The Wisdom of the Vikings

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Nobody learns from
other people's mistakes.

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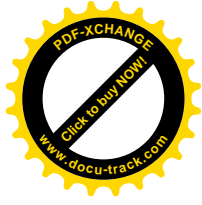
22 March 2006



03 September 1997



02 December 1997



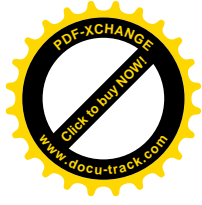
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Mandate is to “Advance Transportation Safety” by:

- ★ **Conducting independent investigations to make *findings as to their causes & contributing factors*;**
- ★ **Identifying Safety Deficiencies;**
- ★ **Making Safety Recommendations;**
- ★ **Reporting publicly on its investigations**



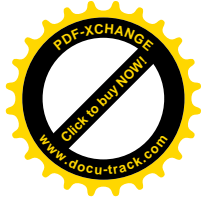
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The Transportation Safety Board (TSB) Act and Regulations

- It is not the function of the Board to assign fault or determine civil or criminal liability
- The Findings of the Board are not binding on the parties to any legal, disciplinary or other proceedings.



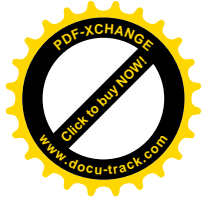
F/V Accident Statistics

Year of Operation	2004	2005	2006	2007	2008
F/V accidents	331	305	291	280	277
Fatalities	16	14	10	6	14
No. of Fishermen	53,783	52,822	51,462	51,462	51,462
No of active F/V	16,754	16,722	16,550	16,550	16,550
F/V Accident rate %	1.98	1.82	1.76	1.69	1.67
Annual fatality rate/100,000	29.75	26.50	19.43	11.66	27.20
Ann. Fatality rate/100,000 (UK)	Average of 126/yr over the past 15 years				
Ann. Fatality rate/100,000 (US)					112



More Statistics

- F/V accidents are generally associated with relatively high loss rate.
 - Sixty (60) fishermen lost their lives during the last 5 years – one every month for the past 5 years.
 - Over the last five years, a total of 115 FVs have been lost in accidents - this represent 23 vessels lost per year.
- TSB has made over 40 Recommendations on fishing vessel safety issues.
- At least 18 investigations identified that Fishery Management Regime contributed, at least in part, to those accidents.



Findings of TSB Investigations

(Reported at IFISH 1 Woods Hole, Massachusetts)

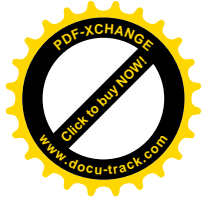
October 2000

- Stability related issues
- Inadequate life saving equipment
- Training and awareness
- Unsafe loading and operating practices
- Operating in extreme weather conditions
- Fishery Resource management /Economic pressure
- Inadequate inspection and enforcement
- Work-Rest schedule and Fatigue
- Watertight integrity / Opening and unsecured hatches



Findings of TSB Investigations (Since IFISH 1 Reporting)

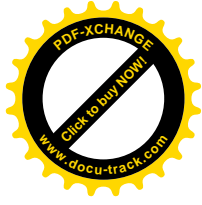
- Unsafe operating procedures/practices - Code of best practices
- Issues associated with inadequate vessel stability
- Carriage and use of life-saving appliances and equipments
- Impact of fishery resource management regime on overall safety of fishing vessels.
- Safety Culture



Findings of Investigations/Studies

(by other organizations)

- *“Fishing Vessel Safety - Blue Print for a National Program” Study*
 - By United States National Research Council
- *“Fishing Vessel Safety Review (Less than 65 feet)”*
 - By Maritime Search & Rescue - Newfoundland Region – November 2000
- *“Analysis of UK Fishing Vessel Safety 1992 – 2008”*
 - By Marine Accident Investigation Board - November 2008



NRC

The National Research Council

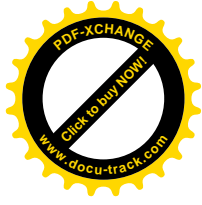
“Fishing Vessel Safety - Blue Print for a National Program”- 1991

- External influences beyond the control of fishermen quite often set the stage for accidents to happen.
- Stability problems caused by overloading for example may indirectly be a result of insufficient training standards.
- Competition for quota shares may have driven the action to take more fish than the vessel was designed to carry.



Fisheries and Oceans
Canada

Pêches et Océans
Canada

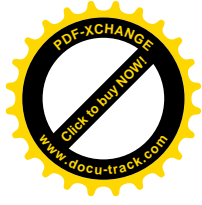


Fishing Vessel Safety Review (Less than 65 feet)

(by Maritime SAR- Newfoundland Region)

Nov.2000

- Risk-taking
- safety culture
- carriage of safety and survival equipment
- training and education
- inspection, compliance and prevention programs
- Fish management regimes

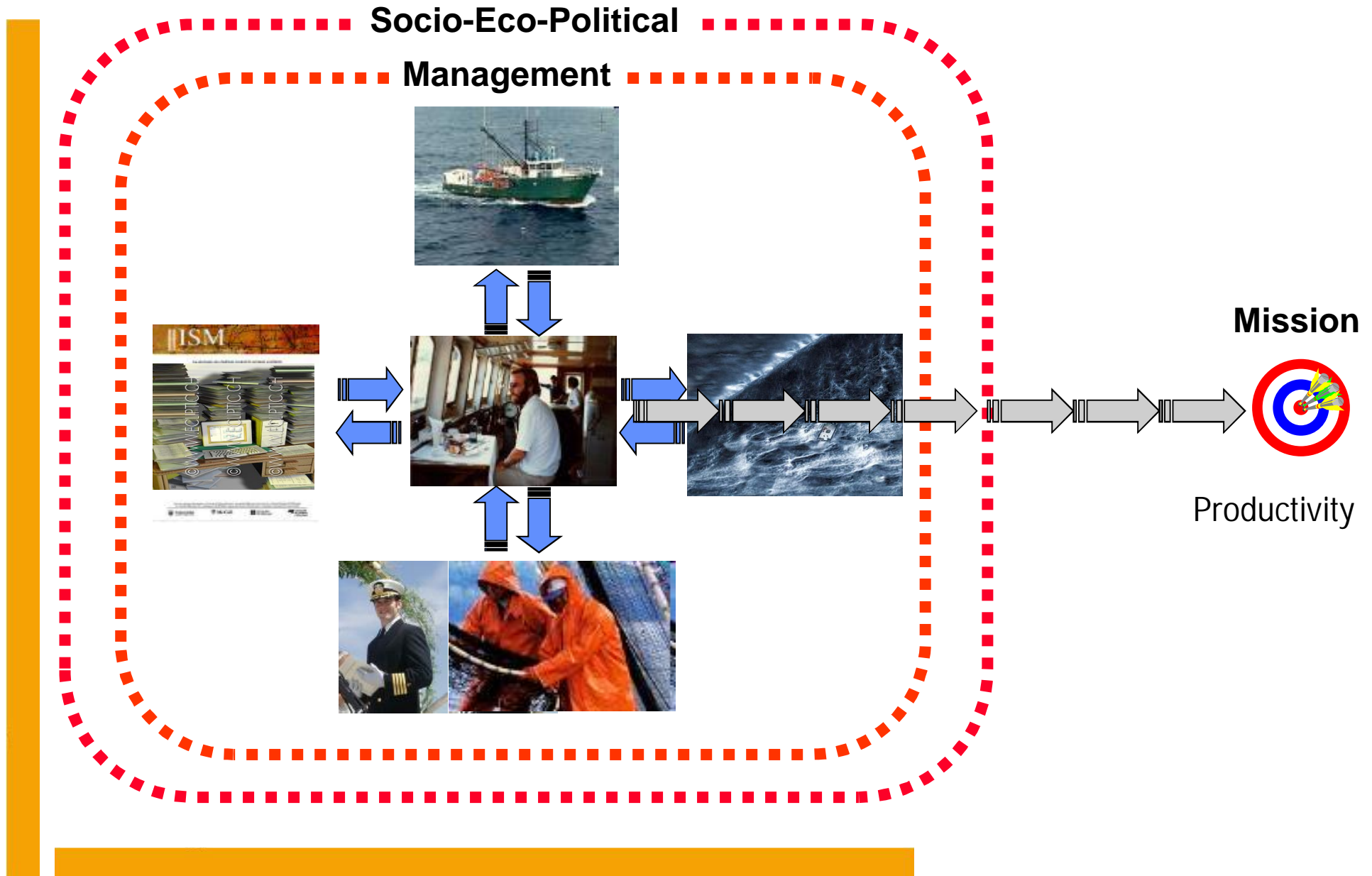


UK Marine Accident Investigation Board

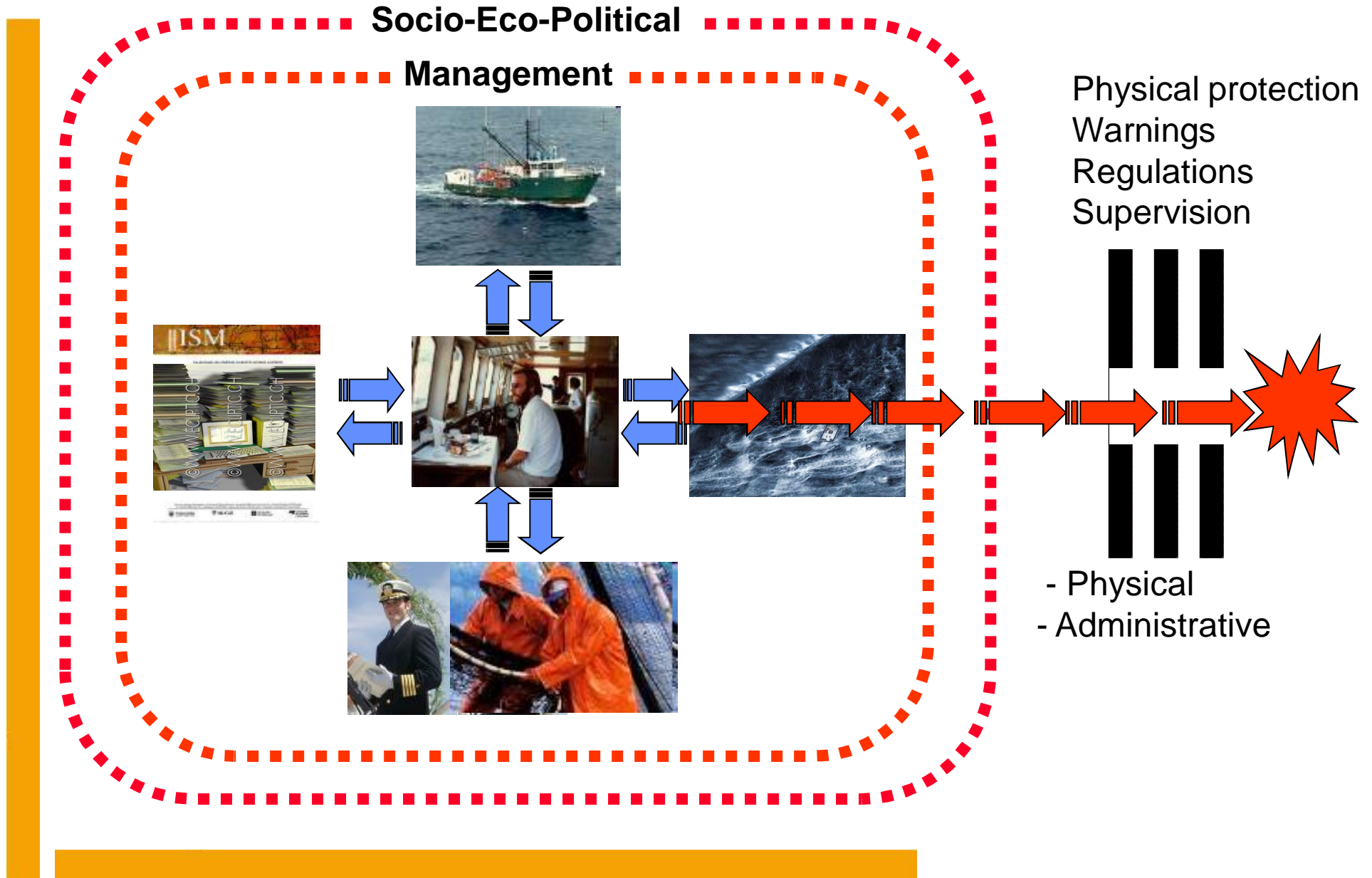
(Fishing Vessel Safety Study – November 2008)

- Risk Assessment
- Codes of Practice
- Survey and Inspection
- Stability
- Life Saving Appliances
- Safety Culture
- Training

Accident Causation Model - System Approach



Accident Causation Model - System Approach

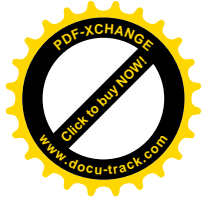




Fishery Management Issues

Canadian Experience

- Vessel size restrictions led to modifications to or design of FVs which render them unseaworthy or inherently unstable.
- Permits to carry increased number of traps/gear or to engage in multi-species fishing led to overloading and to unsafe operating conditions.
- Fishing seasons opening at midnight or without regard to weather or sea conditions



Fishery Management Issues

Canadian Experience (Contd.)

- Licensing of fisheries which do not produce sufficient income for fishers to afford safe vessels or safety equipment.
- Existing *Fisheries Act* on individual-based licensing does not require that vessels are in safe condition.
- Safety and fishery management objectives are not adequately harmonized. Departments work in isolation.

Influence of FM “*Length Restriction Rules*” on F/V Design

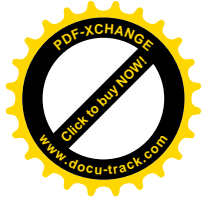


Influence of Length Restriction Rules on the design of F/V *Ryan's Commander*



Capsizing of F/V *Ryan's Commander* (TSB Inv.# M04N0086)





Capsizing of F/V *Ryan's Commander* (TSB Inv.# M04N0086)

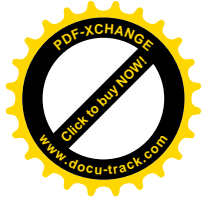


Deck Extension to beat Length Restriction



Race to Fishing Ground on Opening Day





F/V *Fritzi Ann* capsized with 500 prawn traps

(Inv. # M02W0102)



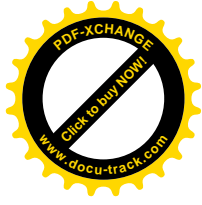
L'Acadien II – Disabled during seal hunt (TSB Inv. # M08M0010)



L'Acadien II Investigation

(TSB Inv. # M08M0010)





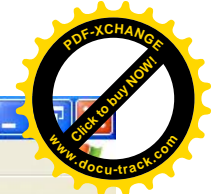
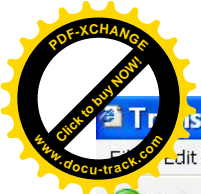
What Has Been Done in Canada?

- Regulators have taken many Safety Actions;
 - “*Fishing Vessel Safety Regulations*” to address, inter alia, stability issues.
 - “*Safe Manning Regulations*”, developed for vessels of more than 15 GRT, will have for number of crews and their qualification.
- Federal and Provincial governments started to work together to address issues.
- Industry associations and Unions are taking proactive measure to coach and train fishermen in safety
- **But** still more needs to be done by all – most importantly by Fishermen themselves



CONCLUSION

- it is not sufficient to address F/V safety solely within the confines of the vessel-based and crew-based regulatory approach.
- safety should also be addressed within the broader context of human & organizational factors
- The way Fishery resources are managed plays significant role.
- Fishing Industry safety is a shared responsibility. To improve, will require systematic attention to safety and commitment of:
 - the government agencies and regulators
 - the industry, owners, operators and, most importantly,
 - the fishermen themselves



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Questions?